# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

# LAKE TROPHIC DATA

# MORPHOMETRIC:

Lake: WEARE RESERVOIR	Lake Area (ha): 130.88
Town: WEARE	Maximum depth (m): 9.1
County: Hillsborough	Mean depth (m): 4.4
River Basin: Merrimack	Volume $(m^3)$ : 5750500
Latitude: 43°06'15" N	Relative depth: 0.7
Longitude: 71°47'00" W	Shore configuration: 2.29
Elevation (ft): 656	Areal water load (m/yr): 29.20
Shore length (m): 9300	Flushing rate $(yr^{-1})$ : 6.60
Watershed area (ha): 7528.6	P retention coeff.: 0.44
% watershed ponded: 2.4	Lake type: artificial

BIOLOGICAL:	3 February 1992	30 July 1991
DOM. PHYTOPLANKTON (% TOTAL) #1	MELOSIRA 50%	TABELLARIA 50%
#2	SYNURA 35%	DINOBRYON 20%
#3		ASTERIONELLA 15%
PHYTOPLANKTON ABUNDANCE (cells/mL)		620
CHLOROPHYLL-A (µg/L)		5.48
DOM. ZOOPLANKTON (% TOTAL) #1	ASTYLOZOON 66%	KELLICOTTIA 28%
#2		CILIATE SPP. 15%
#3		NAUPLIUS LARVAE 11%
ROTIFERS/LITER	11	170
MICROCRUSTACEA/LITER	6	92
ZOOPLANKTON ABUNDANCE (#/L)	50	323
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		3.5
BOTTOM DISSOLVED OXYGEN (mg/L)	7.2	0.2
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		< 10
#3		

# SUMMER THERMAL STRATIFICATION:

### stratified

Depth of thermocline (m): 4.6 Hypolimnion volume  $(m^3)$ : 704500 Anoxic volume  $(m^3)$ : 1107000

#### CHEMICAL: Lake: WEARE RESERVOIR Town: WEARE 3 February 1992 30 July 1991 DEPTH (m) 2.0 4.0 2.0 5.5 6.4 6.5 pH (units) 6.8 6.0 A.N.C. (Alkalinity) 4.4 4.0 5.9 4.7 NITRATE NITROGEN 0.03 < 0.02 < 0.05 < 0.05 TOTAL KJELDAHL NITROGEN TOTAL PHOSPHORUS 0.011 0.007 0.008 0.018

51.5

28

 CALCIUM
 2.8

 SODIUM
 5.2

 POTASSIUM
 0.51

 CHLORIDE
 7
 6
 7

49.3

5

30

CALCITE SATURATION INDEX 3.3

All results in mg/L unless indicated otherwise

5

TROPHIC CLASSIFICATION: 1991

CONDUCTIVITY (µmhos/cm)

APPARENT COLOR (cpu)

MAGNESIUM

SULFATE
TN : TP

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
6	2	1	1	10	Meso.

49.7

29

0.62

4

47.1

6

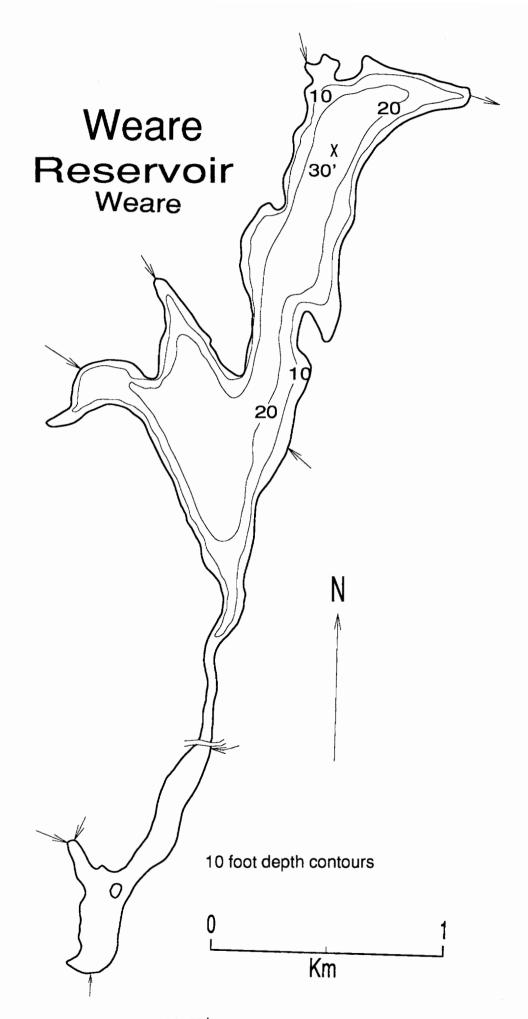
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44

#### **COMMENTS:**

- 1. Also known as Horace Lake.
- 2. This pond was previously surveyed and classified in 1979. There was no change in water quality or trophic status between the two years.
- 3. A paved boat ramp at Chase Park was available for a \$10.00 launching fee.

  A state boat ramp was present but was in poor condition and had no parking available.
- 4. Merismopedia (30%) was the dominant genus of wholewater plankton. Bluegreens (40%) were the dominant class.



# FIELD DATA SHEET

LAKE: WEARE RESERVOIR TOWN: WEARE DATE: 07/30/91 WEATHER: MOSTLY CLOUDY; 70'S

211121 01730732	***************************************	MERT MODILI CLOODI,	
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	24.5	9.4	111 %
1.0	24.0	9.3	110 %
2.0	24.0	9.3	110 %
3.0	23.5	9.2	107 %
4.0	21.5	5.6	62 %
5.0	16.5	0.2	2 %
6.0	13.0	0.2	2 %
7.0	12.0	0.2	2 %

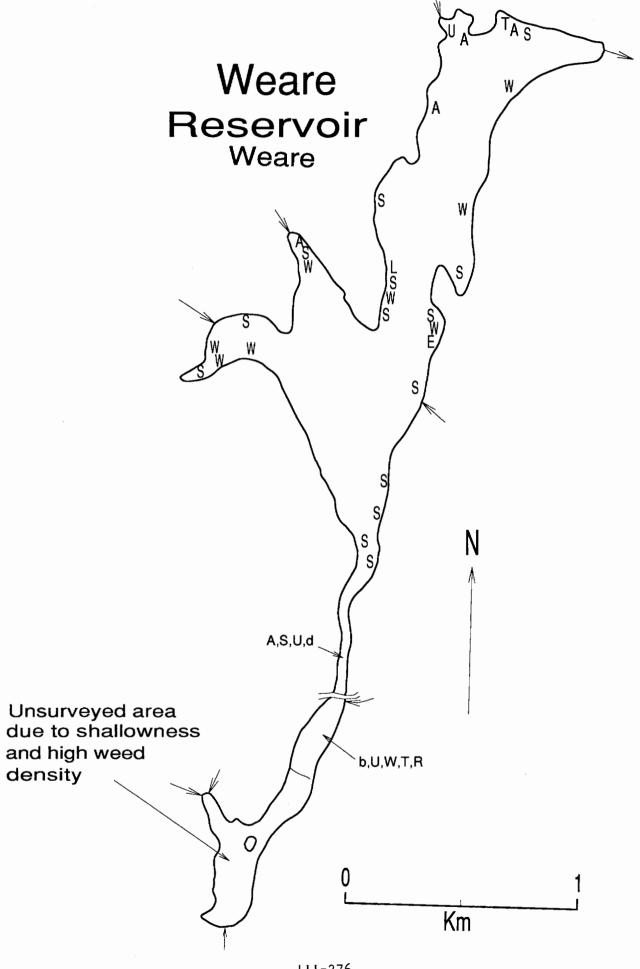
SECCHI DISK (m): 3.5

**COMMENTS:** 

BOTTOM DEPTH (m): 7.6

TIME: 1230

\*Dissolved oxygen values are in mg/L



# AQUATIC PLANT SURVEY

LAK	E: WEARE RESERVOIR	TOWN: WEARE	DATE: 07/30/9
Кеу	PLANT	ABUNDANCE	
,	GENERIC	COMMON	ADONDANCE
T	Typha	Cattail	Sparse
A	Sagittaria	Arrowhead	Sparse
S	Sparganium	Bur reed	Scattered
W	Potamogeton natans	Floating-leaf pondweed	Scattered
E	Eriocaulon septangulare	Pipewort	Sparse
U	Utricularia	Bladderwort	Sparse
d	Dulichium arundinaceum	Three-way sedge	Sparse
b	Scirpus	Bulrush	Sparse
R	Potamogeton robbinsii	Robbins pondweed	Sparse
L	Potamogeton spp.	Thin-leaved pondweed	Sparse
-			

#### OVERALL ABUNDANCE: Scattered

# **GENERAL OBSERVATIONS:**

1. Plants were sparse in the main body of the pond but were very abundant in the southern end, south of the bridge and in the channel immediately north of the bridge. The area south of the island in the southern end is essentially a wetland.